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ABSTRACT

The school personnel program described here is designed to provide users with a basic, yet comprehensive understanding of computers--their concepts, functions, and their applicability to today's education. It is intended for teachers, school administrators, curriculum specialists, and undergraduate education majors who wish to acquire computer knowledge and skills. REACT I (Relevant Educational Applications of Computer Technology) is made up of 10 program booklets. This description provides information on the purposes and content of the program as well as activities and resources involved. A critique, ordering information, and history of development are also included. (DS)

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DESCRIPTION OF TEACHER INSERVICE EDUCATION MATERIALS

SUMMARY INFORMATION

Title: REACT I. COMPUTERS IN EDUCATION: A SURVEY

Publication Date(s): 1971

Intended Users: Inservice teachers, school administrators, curriculum specialists, undergraduate and graduate education majors who wish to acquire computer knowledge and computer skills

Grade Level(s): Elementary, middle, secondary school

Number: Individual or group

Primary Focus: The intent of this program is to provide users with a basic, yet comprehensive understanding of computers--their concepts, functions and their applicability to today's education.

School subject(s) and/or inservice topic(s) covered:

The inservice topic covered by REACT 1 (Relevant Educational Applications of Computer Technology) is the computer in education. Several aspects of computer systems are covered in ten individual program booklets.

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What participant does in using the materials:

The ten program books may be applied in a variety of settings. They may be used as the basis of an intensive workshop, or in a less structured inservice program, or may be studied independently. As all of the books have their own focus, learning activities are specifically designed to meet the objectives of each program.

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Resources:

The ten REACT 1 books are the fundamental learning tools involved in the program. At the beginning of many of the books, special equipment needs are listed and any required supplementary materials are noted. Several of the books require that users do work on a teletype terminal. Therefore, access to a computer is necessary if users are to benefit fully from the program.

Describer critique:

This is a very well organized program which should be of considerable value to those already versed in computer technology, as well as to people who are "beginners" in understanding and using computers. The booklets are written in an engaging, jargon-free style. They painlessly deliver a great amount of technical--applicable--information.

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1.0 PURPOSES:

Rationale

The developers offer the following rationale for the program:

"The REACT computer training courses were developed in recognition of the fact that a degree of 'computer literacy' is valuable for all educators today. If you are a school administrator, you face decisions about the most appropriate use of the computer for data management in your school or school district . . . . "

"If you are a teacher, you are, or soon will be, faced with decisions about the place of the computer in the curriculum, the purposes for which it will be used, how much it will be used, and many related questions. The REACT courses will help prepare you to make such decisions and to use the computer efficiently in your own teaching."

Goals

The primary intention of the REACT program is "to equip the educator to make competent decisions about the use of computers in administration or in a particular subject area. This objective is accomplished by providing a background in basic computer concepts, some experience in programming a computer, and appreciation of the social impact of the computer and hands-on experience with administrative and instructional applications."

Objectives

Each of the ten program booklets has a list of objectives. These are specific in nature, and relate directly to the program content. For example, in book two, the first few objectives are stated like this:

"After completing this book, the learner should be able to:

1. List at least four methods people use to solve problems;

2. State the one method used by the computer to solve problems; and

3. Discriminate between man's role in developing a sequence of instructions and the computer's role in following the sequence of instructions."

2.0 CONTENT — Scope and Sequencing of Topics:

Scope

The titles of the ten booklets and the developers' brief descriptions of their contents are listed below:

1. REACT and the Computer in Education (52 pp.) "provides an overview of the course of study for teacher and administrator, as well as serving as a general introduction to computers."
2. Flowcharts and Algorithms (56 pp.) "explores problem-solving techniques with particular emphasis on the algorithmic approach and flow-charting."
3. Man-Machine Languages (42 pp.) "introduces computer programming using a simple simulated computer. Topics include the nature of man-machine communication, and characteristics of machine-level and high-level languages."
4. Using the Teletype (48 pp.) "instructs the reader in the use of the teletype by a progression of hands-on steps at the keyboard."
5. The Social Impact of Computers (114 pp.) "Attention is given to present and potential impact of computers in society. Areas of creativity, privacy of information in a retrieval system, and the 'Computer Utility' explored through computer programs."
6. Teach Yourself Basic I (64 pp.) "Using a terminal connected to a time-sharing system the user is guided through a series of exercises designed to allow him to learn to program BASIC."

6a. Teach Yourself Basic II (64 pp.) "extends the user's knowledge of BASIC programming programming through an additional series of exercises."

7. Computers in Instruction (54 pp) "covers the areas of instruction about computers, problem-solving, simulation, computer-managed instruction and computer-assisted instruction."
8. Computers in School Administration (58 pp.) "discusses the range of applications commonly automated in the field of school administration. An outline salary negotiation program is presented as an example of an administrative planning tool."
9. Computers in Guidance, Testing and Libraries (52 pp.) "describes several systems which have been developed in the areas of guidance, college selection, test analysis, and library administration."
10. REACT: Unit Tests (62 pp.) "contains multiple choice examination questions and answers for each of the units listed above. Tests are suitable for pre-tests and/or post-tests."

Sequence

The books are intended to be studied in the order in which they are numbered.

3.0 ACTIVITIES AND RESOURCES INVOLVED IN USE OF PRODUCT

3.1 Description of main inservice activities:

Using the objectives for each unit as a guide, users will progress through the ten booklets, studying the material and solving the problems that are presented. After completing each booklet, users may assess their comprehension of the program by taking the self-quiz at the book's end. Content summaries, glossaries and bibliographies are also provided.

Study of the materials requires thirty hours; the program may be structured to suit the needs and characteristics of the user group.

3.2 Help given in use of product:

No separate booklet which could be described as an instructor's manual or implementor's guide is supplied in the package. However, Book 10. REACT: Unit Tests is meant for use by the program instructor. These tests are intended as "suggested questions." The instructor may choose to administer these as pre/post tests, or use the test items in a comprehensive, final test.

4.0 EVALUATION OF TEACHER INSERVICE LEARNING

As noted above, a book of tests is provided with the program which may be used at the discretion of the course instructor. Each booklet also contains a self-quiz, by which users may evaluate their own progress in relation to each unit's objectives.

5.0 ORDERING INFORMATION

5.1 Resources required/recommended for implementing product:

Besides the routine logistical needs that any workshop/program requires (i.e., space for group meetings, scheduling, etc.) some units call for special equipment or supplementary materials. These are listed at the beginning of the booklets. Many of the books involve work on a teletype terminal, so users must have access to one. An instructor is needed to implement the thirty-hour program.

5.2 Distributor name/address:

Tecnica Education Corporation
1864 South State Street, Suite 100
Salt Lake City, Utah 84115

Call Northwest Regional Educational Laboratory for ordering information:
(503) 248-6800

5.3 Components/approximate costs:

Component	Purchase	Rental	No. Req.	Reusable
REACT 1: COMPUTERS IN EDUCATION: A SURVEY (ten books)	$2.95 each			
1-20 books	$27.95			
over 20 books	$20.50			

Note: Unit prices for 1-20 books: Books 1, 2, 3, 4, 6, 6A, 7, 8, 9, 10 - $2.95 each.
Book 5 - $3.95.

Unit prices for over 20 books: Books 1, 2, 3, 4, 6, 6A, 7, 8, 9, 10 - $1.95 each.
Book 5 - $2,95.

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6.0 HISTORY OF DEVELOPMENT

6.1 Identification of the developer:

The REACT programs were developed by the Northwest Regional Educational Laboratory (NWREL) under a contract with the U.S. Office of Education, Department of HEW. The materials have been published and are disseminated by Tecnica Education Corporation, Salt Lake City. Dr. Kenneth Simon, Director of Dissemination and Installation at NWREL, oversaw the development and publication of the REACT programs.

6.2 How developed and when:

The Preface to Book 1 provides the following description of the development of the REACT program: "The training program has been developed by NWREL over the past two years (copyright, 1971). During development and evaluation, the REACT courses and materials were tested in a variety of settings. The program was presented as a graduate course for preparing school administrators at the University of Oregon and at the New York Institute of Technology. It was given as an evening extension course through the Multnomah County (Oregon) Intermediate Education District, and as an inservice program at a small rural school in North Bend, Oregon."

6.3 Evidence of effectiveness with users:

The developers provided no results of field testing conducted with the program, nor did they cite what revisions were made after the various field tests (see 6.2 for field test history).

DESCRIBER CRITIQUE

Appropriateness / adaptability / technical quality:

The program approach is to begin at the simplistic level and work toward the more sophisticated: this technique allows users who are unfamiliar with computers to gain an understanding of them and some skill in applying this knowledge.

The program is adaptable to a variety of learning settings and may be applied in an intensive workshop or in a loosely structured inservice program.

The technical quality of the ten printed booklets is excellent. They are clearly outlined, easy to read, clever and engaging in their language.

Content accuracy/social fairness/community acceptance issues:

The only problems with community acceptance that the REACT programs would encounter might be with those who have difficulty understanding or accepting the computer as part of today's society. The authors are sensitive to this issue and speak at length about the "Social Impact of Computers" (Book 5). They discuss "computer power" versus "man power" in an effort to put the computer's role in proper perspective.

Due to its technical orientation, it is assumed that the material is factually accurate.

Overall summary/comment:

This REACT program has much to recommend it to educators--teachers and administrators alike. Its topic is, of course, timely, but it is the way the subject of computer technology is approached that makes this program so valuable. The booklets have a graceful way of conveying a prodigious amount of information without overburdening the reader in technical language or space-age jargon. They are understandable, interesting and enthusiastic. The books, in fact, are so cleverly written that those who previously found computer technology a "turn-off" may even develop some affection for the computer. Most importantly, perhaps, is the program's ability to provide educators with not only an understanding of the workings of computers, but also with real, practical experience in making computers work for education.